

REMARKS**INTRODUCTION:**

In accordance with the foregoing, new claim 18 has been added. No new matter is being presented, and approval and entry are respectfully requested.

Claims 1, 3-15 and 17-18 are pending and under consideration. Reconsideration is respectfully requested.

REJECTION UNDER 35 U.S.C. §103:

In the Office Action, at pages 2-4, numbered paragraph 5, claims 1, 3-15, and 17 were rejected under 35 U.S.C. §103(a) as being unpatentable over Takagi et al. (USPN 6,311,801; hereafter, Takagi) in view of Shimogama et al. (USPN 6,498,448; hereafter, Shimogama). The reasons for the rejection are set forth in the Office Action and therefore not repeated. The rejection is traversed and reconsideration is requested.

It is respectfully submitted that there may be a misunderstanding concerning the function of the Takagi invention, the function of the Shimogama invention and the function of the present invention. Takagi teaches a brake control apparatus for an elevator that includes an auxiliary power source for storing energy for driving a brake coil of an electromagnetic brake upon release of a brake wheel wherein a DC voltage is boosted only when the brake is released, and the voltage-boosting function ceases when the brake is held in a released condition. That is, this "brake control apparatus for an elevator uses a lower voltage and only one DC power source and immediately supplies the necessary energy to the brake coil to release the brake independently of the power source voltage at the time" (Abstract, Takagi) (emphasis added).

Similarly, Shimogama teaches a "motor brake releasing device includes an electromagnetic brake for locking a motor shaft and a switch mounted between the electromagnetic brake and a releasing power supply for the brake" (Abstract, Shimogama) (emphasis added).

Thus, both Takagi and Shimogama teach boosting voltage only when a brake for a motor is released. In contrast, the present invention teaches boosting voltage to activate braking of a motor.

For example, the independent claims of the present invention provide the following:

claim 1:

A motor control apparatus supplying braking power for braking a motor, comprising: (emphasis added)

a braking power providing unit to receive an input voltage lower than a braking voltage and to boost the input voltage to the braking voltage to brake the motor; (emphasis added)

a switching unit closing to allow the braking power providing unit to store input power and opening to allow the braking power providing unit to output braking power by boosting the input voltage and a stored voltage to the braking voltage;

a controller to control the switching unit to close and to open; and

a power supply to supply power to the controller, wherein the power from the power supply is used as the input power to be supplied to the braking power providing unit.

claim 17:

A motor control apparatus supplying braking power to a braking power providing unit for braking a motor, comprising: (emphasis added)

a controller to control the braking power providing unit to brake the motor and to store input power, as stored power, to supplement the power to the braking power providing unit when braking the motor; and (emphasis added)

a power supply to supply power to the controller such that, when braking the motor, the input power from the power supply is supplemented by the stored power from the controller and supplied to the braking power providing unit.

Hence, it is respectfully submitted that independent claim 1 of the **present invention** recites a **braking power providing unit** wherein the input voltage lower than the braking voltage is used to brake the motor, not to release the brake, as is taught by Takagi and Shimogama. Similarly, independent claim 17 of the present invention recites a controller to control the braking power providing unit to brake the motor and to store input power, as stored power, to supplement the power to the braking power providing unit when braking the motor; and a power supply to supply power to the controller such that, when braking the motor, the input power from the power supply is supplemented by the stored power from the controller and supplied to the braking power providing unit.

It is respectfully submitted that braking a motor is different from releasing a brake of a motor. In fact, releasing a brake of a motor is the opposite of braking a motor. Hence, it is respectfully submitted that Takagi and Shimogama teach away from the present claimed invention.

The feature of claim 1 "a power supply to supply power to the controller, wherein the power from the supply is used as the input power to be supplied to the braking power providing unit" is also different from the arrangements of Takagi and Shimogama. Claim 17 of the present invention is also different from Takagi and Shimogama for similar reasons.

Takagi teaches an "auxiliary power source means for storing energy for driving the brake coil, and exciting the brake coil by supplying stored energy to said brake releasing means upon release of the brake wheel" (see claim 1 of Takagi). FIG. 1 of Takagi shows that a power source provides energy to the auxiliary power source means and the brake releasing means. Col. 5,

lines 22-33 of Takagi recites:

Reference numeral 28 designates a controller that serves as both motor control circuit and brake control circuit (reference numerals 5 and 15 shown in FIG. 6); 29, a DC power source of a relatively low voltage similar to one used for the computer control; 30, a brake release means for releasing the brake wheel by exciting the brake coil 14 in accordance with an instruction from the controller 28; and 31, an auxiliary power source means for storing therein the energy or a part of the energy necessary for driving the brake coil 14 at the time of the release of the brake wheel so as to excite the brake coil 14 using the stored energy at the time of the release of the brake wheel. (emphasis added)

Hence, it is respectfully submitted that Takagi does not teach or suggest "a power supply to supply power to the controller, wherein the power from the supply is used as the input power to be supplied to the braking power providing unit," as is recited in claim 1, and similarly in claim 17, of the present invention.

Shimogama teaches a switch to release a motor brake, and does not teach or suggest "a power supply to supply power to the controller, wherein the power from the supply is used as the input power to be supplied to the braking power providing unit," as is recited in claim 1, and similarly in claim 17, of the present invention.

Thus, it is respectfully submitted that claims 1 and 17 of the present invention are patentable under 35 U.S.C. §103(a) over Takagi et al. (USPN 6,311,801) in view of Shimogama et al. (USPN 6,498,448). Since claims 3-15 depend from claim 1, claims 3-15 are submitted to be patentable under 35 U.S.C. §103(a) over Takagi et al. (USPN 6,311,801) in view of Shimogama et al. (USPN 6,498,448) for at least the reasons claim 1 is patentable under 35 U.S.C. §103(a) over Takagi et al. (USPN 6,311,801) in view of Shimogama et al. (USPN 6,498,448).

NEW CLAIM:

New claim 18 recites that the features of the present invention include a braking power providing unit receiving an input voltage lower than a braking voltage and boosting the input voltage to a braking voltage to brake a motor, comprising: an inductor, storing power of the input voltage from a power supply; and a condenser, outputting a voltage higher than the input voltage to the inductor to brake the motor, wherein a switching unit closes to allow the braking power providing unit to store input power and opens to allow the braking power providing unit to output braking power by boosting the input voltage and the stored voltage to the braking voltage.

Nothing in the prior art teaches or suggests such. It is submitted that this new claim distinguishes over the prior art.

CONCLUSION:

In accordance with the foregoing, it is respectfully submitted that all outstanding objections and rejections have been overcome and/or rendered moot, and further, that all pending claims patentably distinguish over the prior art. Thus, there being no further outstanding objections or rejections, the application is submitted as being in condition for allowance which action is earnestly solicited.

If the Examiner has any remaining issues to be addressed, it is believed that prosecution can be expedited by the Examiner contacting the undersigned attorney for a telephone interview to discuss resolution of such issues.

If there are any underpayments or overpayments of fees associated with the filing of this Amendment, please charge and/or credit the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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